

SYSTEM FOR SUBSTRATE POTENTIAL REGULATION DURING POWER-
UP IN INTEGRATED CIRCUITS

ABSTRACT OF THE DISCLOSURE

5 An integrated circuit with body-bias inputs coordinated
by a switch at initial power application. A switch coupled to
the N-well bias and P-type substrate bias lines of an
integrated circuit selectively couples the substrate to
ground or the substrate bias supply, depending upon the state
10 of the bias supply lines. During power-up and the initial
application of the N-well bias, the substrate is coupled to
ground to prevent a leakage induce rise in the substrate
potential. Upon sensing the presence of the substrate bias
potential on the substrate bias line, the switch couples the
15 substrate to the substrate bias line instead of ground. In
another embodiment, a switch indirectly senses the
availability of the substrate bias potential by sensing a
charge pump enable signal.